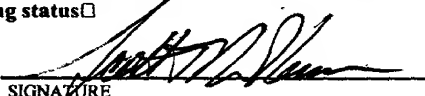




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PATENT TRADEMARK OFFICE

FORM PTO-1390 (REV 10-2000)		U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE		ATTORNEY'S DOCKET NUMBER 01107	
TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371				U.S. APPLICATION NO. (If known, see 37 CFR 1.5) 09/831918	
INTERNATIONAL APPLICATION NO. PCT/FR99/02899		INTERNATIONAL FILING DATE November 24, 1999		PRIORITY DATE CLAIMED November 25, 1998	
TITLE OF INVENTION EASY-TO-OPEN COVERS					
APPLICANT(S) FOR DO/EO/US Bernard DAUTREPPE; Jacky MAUGAS					
Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:					
<p>1. <input checked="" type="checkbox"/> This is a FIRST submission of items concerning a filing under 35 U.S.C. 371.</p> <p>2. <input type="checkbox"/> This is a SECOND or SUBSEQUENT submission of items concerning a filing under 35 U.S.C. 371.</p> <p>3. <input type="checkbox"/> This is an express request to promptly begin national examination procedures (35 U.S.C. 371(f)).</p> <p>4. <input type="checkbox"/> The US has been elected by the expiration of 19 months from the priority date (PCT Article 31).</p> <p>5. <input checked="" type="checkbox"/> A copy of the International Application as filed (35 U.S.C. 371(c)(2)) published w/ International Search Report</p> <p>a. <input checked="" type="checkbox"/> is attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> has been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> is not required, as the application was filed in the United States Receiving Office (RO/US).</p> <p>6. <input checked="" type="checkbox"/> An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)) published.</p> <p>7. <input type="checkbox"/> Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))</p> <p>a. <input type="checkbox"/> are attached hereto (required only if not communicated by the International Bureau).</p> <p>b. <input type="checkbox"/> have been communicated by the International Bureau.</p> <p>c. <input type="checkbox"/> have not been made; however, the time limit for making such amendments has NOT expired.</p> <p>d. <input type="checkbox"/> have not been made and will not be made.</p> <p>8. <input type="checkbox"/> An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).</p> <p>9. <input type="checkbox"/> An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).</p> <p>10. <input checked="" type="checkbox"/> An English language translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).</p>					
Items 11 to 16 below concern document(s) or information included:					
11. <input checked="" type="checkbox"/> An Information Disclosure Statement under 37 CFR 1.97 and 1.98.					
12. <input type="checkbox"/> An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.					
13. <input checked="" type="checkbox"/> A FIRST preliminary amendment.					
<input type="checkbox"/> A SECOND or SUBSEQUENT preliminary amendment.					
14. <input type="checkbox"/> A substitute specification.					
15. <input type="checkbox"/> A change of power of attorney and/or address letter.					
16. <input type="checkbox"/> Other items or information:					

US APPLICATION NO. 09/831918		INTERNATIONAL APPLICATION NO. PCT/FR99/02899		ATTORNEY'S DOCKET NUMBER 01107	
21 <input checked="" type="checkbox"/> The following fees are submitted:				CALCULATIONS PTO USE ONLY	
BASIC NATIONAL FEE (37 CFR 1.92(a)(1)-(5)): Neither international preliminary examination fee (37 CFR 1.82) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO <input type="checkbox"/> \$1000.00 International preliminary examination fee (37 CFR 1.82) not paid to USPTO but International Search Report prepared by the EPO or JPO <input type="checkbox"/> \$860.00 International preliminary examination fee (37 CFR 1.82) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO <input type="checkbox"/> \$710.00 International preliminary examination fee (37 CFR 1.82) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) <input type="checkbox"/> \$690.00 International preliminary examination fee (37 CFR 1.82) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4) <input type="checkbox"/> \$100.00 ENTER APPROPRIATE BASIC FEE AMOUNT =					
Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.92(e)) <input type="checkbox"/>				\$ 860.00	
Total claims 22 - 20 = 2				\$ 130.00	
Independent claims 2 - 3 = -					
MULTIPLE DEPENDENT CLAIM(S) (if applicable) + \$270.00					
TOTAL OF ABOVE CALCULATIONS =				\$ 1026.00	
<input type="checkbox"/> Applicant claims small entity status <input type="checkbox"/> See 37 CFR 1.27 <input type="checkbox"/> The fees indicated above are reduced by 1/2 <input type="checkbox"/>					
SUBTOTAL =				\$ 1026.00	
Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)) <input type="checkbox"/>					
TOTAL NATIONAL FEE =				\$ 1026.00	
Fee for recording the enclosed assignment (37 CFR 1.21(h)) <input type="checkbox"/> The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31) <input type="checkbox"/> \$40.00 per property +					
TOTAL FEES ENCLOSED =				\$ 1026.00	
				Amount to be refunded: \$	
				charged: \$	
a <input type="checkbox"/> A check in the amount of \$ _____ to cover the above fees is enclosed <input type="checkbox"/>					
b <input type="checkbox"/> Please charge my Deposit Account No. _____ in the amount of \$ _____ to cover the above fees <input type="checkbox"/> A duplicate copy of this sheet is enclosed <input type="checkbox"/>					
c <input type="checkbox"/> The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any overpayment to Deposit Account No. _____ <input type="checkbox"/> A duplicate copy of this sheet is enclosed <input type="checkbox"/>					
d <input checked="" type="checkbox"/> Fees are to be charged to a credit card <input type="checkbox"/> WARNING: Information on this form may become public <input type="checkbox"/> Credit card information should not be included on this form <input type="checkbox"/> Provide credit card information and authorization on PTO-2038 <input type="checkbox"/>					
NOTE: Where an appropriate time limit under 37 CFR 1.394 or 1.395 has not been met, a petition to revive (37 CFR 1.337 (a) or (b)) must be filed and granted to restore the application to pending status <input type="checkbox"/>					
SEND ALL CORRESPONDENCE TO Dennison, Scheiner, Schultz & Wakeman 612 Crystal Square 4 1745 Jefferson Davis Highway Arlington, VA 22202-3417 (703) 412-1155 Ext. 17 (703) 412-1161 FAX					
SIGNATURE  Scott T. Wakeman NAME 37,750 REGISTRATION NUMBER					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

Bernard DAUTREPPE, et. al. Group Art Unit: (not assigned)

Serial No.: (not assigned)

Filed: (herewith)

For: EASY-TO-OPEN COVERS

PRELIMINARY AMENDMENT

Honorable Commissioner of
Patents and Trademarks
Washington, DC 20231

Sir:

Please amend the above-captioned application as follows:

IN THE CLAIMS:

3. (Amended) Cover of claim 1 wherein gripping tab (46) is positioned according to a generating line of said cone and is located between two lines of weakness (43, 44) and fastened to said opening strip (45), said tab (46) using said notches (460, 461) to automatically direct the tearing strain when said cover is opened towards said two lines of weakness (43, 44) such that said cover is opened easily, ensuring the remaining lower part 11 of the cover located beneath said lower line (44) stays intact and said cork wire 3, if fitted, is freed.

4. (Amended) Cover of claim 1 wherein said tab (46)

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comprises notches or recesses (460,461) made in said film or sheet material constituting said cover.

5. (Amended) Cover of claim 1 wherein width L_1 of said tab (46) ranges from 0.5 L to L with L ranging between 1.5 and 4 cm.

6. (Amended) Cover of claim 1 wherein said lower part (11, 65) comprises a so-called lower reinforcement (67) reinforcement means that increases the mechanical properties of all or part of said lower part (11) and adheres to all or part of the inner surface of said lower part (11, 65) at least along said lower line of weakness (44) and parallel to said lower line of weakness, said lower reinforcement (67) may also comprise an adhesive layer over all or part of the surface that can be activated and that is intended to adhere to said neck.

8. (Amended) Cover of claim 6 wherein all or part of the inner surface of said lower part (11) comprises a layer of glue or adhesive as fastening means that can be activated and that constitutes a bonded part 66 that adheres to said neck, typically after it has been activated.

10. (Amended) Cover of claim 1 wherein said upper part

comprises a so-called upper reinforcement means (47) selected, particularly in terms of type and position on the inner surface of said upper part, to increase the mechanical properties of all or part of said upper part such that when said recipient or bottle is opened for said first time said opening strip (45), which is created by pulling on gripping tab (46), removes the whole of said upper part (10) along with it and to enable said upper line of weakness (43) to be removed by said upper reinforcement means.

13. (Amended) Cover of claim 10 wherein said upper reinforcement means (47) comprise a reinforcement strip or line that includes a lower part or edge (471) adjacent to lower line of weakness (44).

16. (Amended) Cover of claim 10 wherein said upper reinforcement means (47) cover the entire interior surface or inner periphery of the free part of said opening strip (45).

17. (Amended) Cover of claim 6 wherein said upper (47) or lower (67) reinforcement means consist either of a thin sheet or reinforcement strip, typically of a plastic material (preferably PET or PP), paper, or a layer, strip or line of plastic, resin, varnish or paint material.

18. (Amended) Cover of claim 1 wherein said material constituting said cover is selected from sheets or strips of Al or Al alloys, Sn or Sn alloys, shrinkable plastic, Al/PO/Al complex multilayers, Al/PO/paper, PO/Al/PO, charged PO/Al/PO, where Al refers to a layer of aluminum, PO a layer of polyolefin (preferably PE) capable of containing a charge that is typically mineral.

20. (Amended) Method for producing covers (1) of claim 1 wherein:

- a blank of arc (6) of said skirt is cut out of said film or sheet material of height H',
- said lower line of weakness (44) and said notches (460, 461) are provided on an axial edge (60),
- said additional means are provided, being selected from said upper line of weakness (43), said upper reinforcement means (47, 48), said lower reinforcement means (67), said means (66) for fastening all or part of lower part (11) to the neck,
- a radial line of heat- or pressure-activated adhesive (63) may be applied, typically on the other axial edge (61) of said arc, except on the matching part or opposite said tab (46),
- said arc (6) is rolled on a chuck by folding axial edge (60) back onto the other axial edge (61), a line of adhesive is applied between the two edges, or said pre-applied radial line of adhesive is activated, to shape said skirt (4) by pressing

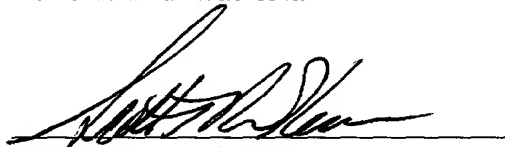
edges (60,61) together and possibly creating said grooves (9), and a head (5) is assembled or created, possibly by adding a part of the head and fastening it typically by thermobonding to upper rim (64) of said skirt that is possibly shrunk and folded.

REMARKS

A translation of the annex to the International Preliminary Examination Report is submitted herewith. This annex includes claims 1-22. By the above amendment, all multiple dependencies have been removed from these claims to place the application in better condition for examination. An action on the merits is respectfully requested.

Respectfully submitted,
Dennison, Scheiner,
Schultz & Wakeman

By:



Scott T. Wakeman
Reg. No. 37,750
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IN THE CLAIMS:

3. (Amended) Cover of claim 1 [either of claims 1 or 2] wherein gripping tab (46) is positioned according to a generating line of said cone and is located between two lines of weakness (43, 44) and fastened to said opening strip (45), said tab (46) using said notches (460, 461) to automatically direct the tearing strain when said cover is opened towards said two lines of weakness (43, 44) such that said cover is opened easily, ensuring the remaining lower part 11 of the cover located beneath said lower line (44) stays intact and said cork wire 3, if fitted, is freed.

4. (Amended) Cover of claim 1 [any of claims 1 to 3] wherein said tab (46) comprises notches or recesses (460, 461) made in said film or sheet material constituting said cover.

5. (Amended) Cover of claim 1 [any of claims 1 to 4] wherein width L_1 of said tab (46) ranges from 0.5 L to L with L ranging between 1.5 and 4 cm.

6. (Amended) Cover of claim 1 [any of claims 1 to 5] wherein said lower part (11, 65) comprises a so-called lower reinforcement (67) reinforcement means that increases the mechanical properties of all or part of said lower part (11)

and adheres to all or part of the inner surface of said lower part (11, 65) at least along said lower line of weakness (44) and parallel to said lower line of weakness, said lower reinforcement (67) may also comprise an adhesive layer over all or part of the surface that can be activated and that is intended to adhere to said neck.

8. (Amended) Cover of claim 6 [either of claims 6 or 7] wherein all or part of the inner surface of said lower part (11) comprises a layer of glue or adhesive as fastening means that can be activated and that constitutes a bonded part 66 that adheres to said neck, typically after it has been activated.

10. (Amended) Cover of claim 1 [any of claims 1 to 9] wherein said upper part comprises a so-called upper reinforcement means (47) selected, particularly in terms of type and position on the inner surface of said upper part, to increase the mechanical properties of all or part of said upper part such that when said recipient or bottle is opened for said first time said opening strip (45), which is created by pulling on gripping tab (46), removes the whole of said upper part (10) along with it and to enable said upper line of weakness (43) to be removed by said upper reinforcement means.

13. (Amended) Cover of claim 10 [any of claims 10 to 12] wherein said upper reinforcement means (47) comprise a reinforcement strip or line that includes a lower part or edge (471) adjacent to lower line of weakness (44).

16. (Amended) Cover of claim 10 [any of claims 10 to 15] wherein said upper reinforcement means (47) cover the entire interior surface or inner periphery of the free part of said opening strip (45).

17. (Amended) Cover of claim 6 [any of claims 6 to 16] wherein said upper (47) or lower (67) reinforcement means consist either of a thin sheet or reinforcement strip, typically of a plastic material (preferably PET or PP), paper, or a layer, strip or line of plastic, resin, varnish or paint material.

18. (Amended) Cover of claim 1 [any claims 1 to 17] wherein said material constituting said cover is selected from sheets or strips of Al or Al alloys, Sn or Sn alloys, shrinkable plastic, Al/PO/Al complex multilayers, Al/PO/paper, PO/Al/PO, charged PO/Al/PO, where Al refers to a layer of aluminum, PO a layer of polyolefin (preferably PE) capable of containing a charge that is typically mineral.

20. (Amended) Method for producing covers (1) of claim 1

[any of claims 1 to 19] wherein:

- a blank of arc (6) of said skirt is cut out of said film or sheet material of height H',
- said lower line of weakness (44) and said notches (460, 461) are provided on an axial edge (60),
- said additional means are provided, being selected from said upper line of weakness (43), said upper reinforcement means (47, 48), said lower reinforcement means (67), said means (66) for fastening all or part of lower part (11) to the neck,
- a radial line of heat- or pressure-activated adhesive (63) may be applied, typically on the other axial edge (61) of said arc, except on the matching part or opposite said tab (46),
- said arc (6) is rolled on a chuck by folding axial edge (60) back onto the other axial edge (61), a line of adhesive is applied between the two edges, or said pre-applied radial line of adhesive is activated, to shape said skirt (4) by pressing edges (60,61) together and possibly creating said grooves (9), and a head (5) is assembled or created, possibly by adding a part of the head and fastening it typically by thermobonding to upper rim (64) of said skirt that is possibly shrunk and folded.

EASY-TO-OPEN COVERSField of the Invention

The invention relates to overcapping covers of bottles of sparkling wine, typically champagne, and in particular covers provided with easy-to-open means.

5 Background art

So-called easy-to-open covers, such as those in figures 1 to 5, are already known. Typically there are two types of covers: those with a tear strip often called a "Tircell" shown in figures 1 to 3, and those
10 with a single or double dashed or dotted line of weakness shown in figures 4 to 5.

Problems posed

The easy-to-open systems that have been proposed
15 previously pose a certain number of problems described below, irrespective of the system used.

As explained above the covers are applied typically to champagne bottles and they play a considerable role in the decorative aspect of the
20 bottles and improve their appearance.

When consumers open the cover either by pulling on the Tircell strip or cutting the cover along the dashed or dotted lines they invariably either fold or accidentally tear the cover. This is because the covers
25 are made of relatively thin sheets or films and the covers are not necessarily torn along the intended lines of weakness that are traced out in advance. The tearing may thus lead an unattractive appearance that is totally random.

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Sparkling wines are also put into bottles that are often provided with cork wire that ensures the cork remains in place and the bottle remains sealed even in the event of excess pressure being applied. It is therefore necessary for the cover to free the cork and cork wire (if present) when it is removed.

In other words an easy-to-open cover is required that overcomes all these drawbacks.

10 Aim of the invention

The invention relates to a cover that enables the user to remove its upper part, which is that covering said cork wire, in a single movement without damaging any of the lower part covering the section of the neck of the bottle beneath the cork wire, such that the maximum quantity of cover remains on the bottle in its attractive, undamaged condition while enabling the cork to be removed.

20 Description of the invention

According to the invention the easy-to-open overcapping cover 1, which is typically conical, comprises a head 5 and a skirt 4 of a film or sheet material, typically for a recipient or bottle of sparkling wine 2 sealed with a cork 8 with a head 80 with means for fastening the cork to the neck of said recipient, typically a metal cork wire 3 provided with a tightening wire 30 that goes under the glass ring 20 of the neck of said bottle and constitutes an opening twist or loop 31, or possibly for a recipient or bottle of still wine comprising easy-to-open means, typically a line of weakness, on the skirt of said cover, and is characterized in that:

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When covers are intended to overcap recipients or bottles of sparkling wine said fastening means may also consist of a staple hooked under the glass ring of the

neck or a threaded cap that operates in conjunction with a threaded ring.

When the fastening means comprise a cork wire provided with an opening twist the line of weakness
5 should be located at such a height that when the cover is applied to said neck it is slightly below the opening twist under the glass ring.

The situation is similar when the fastening means comprise a staple because the ends of the staple,
10 similarly to the opening twist, hook under the glass ring that constitutes a contracted circular section.

The fastening means may consist of a threaded glass ring that operates in conjunction with a cap with a threaded skirt. In this configuration the line of
15 weakness is located just below the lower end of said threaded skirt.

Tests performed on covers of the invention and the background art have shown clearly the benefits of combining the means described above in a), b) and c).
20 The applicant has therefore taken advantage of these means to realize the aim in question, i.e. to remove the entire upper part of the cover in a single movement by pulling between the thumb and index finger of one hand while the other holds the bottle without damaging
25 the lower part of the cover and decoration.

The cover of the invention therefore enables the cover to be opened correctly under "standard" opening conditions. "Opened correctly" implies removing the upper part of the cover while leaving the lower part
30 intact, with a dividing line between the two parts that is typically a circle, such that the neck of the bottle remains covered with the lower part of the cover and said cover remains attractive.

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Tests performed on covers of the invention and the background art have shown clearly that the invention alone enables the cover to be removed correctly and repeatedly without the consumer having to be particularly careful when opening the cover, as is usually the case.

It is important to realize how covers behave when they are opened under "standard" conditions which are typically in social occasions when the person opening the bottle is talking to somebody or in any event is not particularly looking at the cover of the bottle to be opened.

It is under these "standard" conditions that the cover of the invention is of particular interest. Covers of the background art are only opened correctly provided the "Tircell" or the tear strip is pulled in a direction that always remains perpendicular to the axis of the bottle. This is only possible if great care is taken otherwise the "Tircell" does not follow the tear lines and the part of the skirt is torn that should not be or the upper part of the skirt is not correctly torn to reveal the cork wire. The problem is therefore resolved by the combination of the means described in a), b) and c).

Description of the figures

Figures 1 to 5 are partial lateral views of covers 1 of the background art obtained by rolling an arc of a skirt and bonding axial edges 60, 61 and showing various easy-to-open means located on skirt 4.

In figures 1 to 3 the easy-to-open means are "Tircell" strips 41 one end of which is oriented in a more or less sloping direction.

In principle these means enable upper part 10 of cover 1 to be removed and leave lower part 11 on the bottle.

Figures 6a and 6b relate to the upper part of covers 1 that constitute overcapping caps for bottles 2 of still wines sealed with a cork stopper. Figure 6a is a schematic cross-section along the vertical axis and figure 6b is a perspective side view in which opening tab 46 is shown positioned between the upper 43 and lower 44 lines of weakness, said lower line of weakness being located on glass ring 20 of bottle 2, skirt 4 of the cover being crimped under glass ring 20.

25 Figure 8 is a similar side view to that of figure 7 once the consumer has pulled tab 46 to create opening strip 45 and thus revealed cork wire 3 comprising a tightening wire 30 that goes under the glass ring and a tightening loop 31.

30 Figure 9 shows the result obtained after said cover has been opened easily, upper part 10 of the cover comprising head 5 remaining fastened to opening strip 46.

Figure 10 is a cross-section view of neck 7 of a bottle 2 showing the result obtained after the upper part of cover 10 has been removed, with a cork wire 3 covering a cork 8 and holding it in position with a tightening wire 30 that goes under glass ring 20 of the neck of the bottle, and with a lower part 11 of cover 1 held in place on neck 7.

Figures 11a and 11b show top views of the inner surface of two arcs 6 of height H' of conical skirt 4 of the cover consisting of a film or sheet material the outer surface of which is generally printed or decorated, used to produce said cover and including:

- two upper 43 and lower 44 lines of weakness ending in notches 460, 461 along the axial edge 60 that constitutes the upper edge after said arc has been rolled, and a checkered tab 46, lower line of weakness 44 defining an upper part 69 and a lower part 65 of height H'' ,

- a line of adhesive 63 along the other axial edge 61,

- an upper rim 64 to which the head of the cap is fastened,

- and, in the configuration in figure 11a, a fraction of said lower part 65 the inner surface of which is coated with an annular adhesive layer 66 of height H_1 that is activated when the cover is positioned on the neck, said layer being represented in figure 11 and following figures by vertical hatching.

Figures 12a to 15b, which are similar to figures 11a and 11b, show other embodiments of the invention.

In these figures the adhesive layers on lower part 66 are shown by vertical hatching, strengthening layers 67 are shown by horizontal hatching and the

superimposition of a reinforcement and an adhesive layer 68 is shown by crossed hatching.

Therefore:

	Upper part 69	Lower part 65
figure 12a:	reinforcement 47 of height H_2	adhesive layer 66 of height H_1
figure 12b	strengthening strip 48	adhesive layer 66 of height H_1 on bonded reinforcement 67 of height H_3
figure 13a	reinforcement 47 of height H_2 with $H_2 = L$	adhesive layer 66 of height H_1
figure 13b	reinforcement 47 of increasing height H_2	adhesive layer 66 of height H_1
figure 14a	no reinforcement	adhesive reinforcement 68 of height H_1
figure 14b	strengthening strip 48	bonded reinforcement 67 of height H_3
figure 15a	no reinforcement	adhesive layer 66 of height H_1
figure 15b	no reinforcement	bonded reinforcement 67 of height $H_3 = H''$

In figures 15a and 15b upper line of weakness 430
5 is partial such that head 5 is fastened to opening
strip 45 as illustrated in figure 9.

Figure 16 is a top view of the inner surface of an
arc 6 of conical skirt 4 of the cover consisting of a

In figure 18a, only line of weakness 44 is present. An end 472 of upper reinforcement 47 extends beyond said gripping tab, said end acting as a gripping tab, upper reinforcement 47 extending along lower line of weakness 44. Upper notch 460 is used to start the tearing of the upper part and to direct said tearing such that it is stopped by the other end of the upper

reinforcement to enable head 5 of the cover to remain fastened to opening strip 45.

In this figure lower part 65 of arc 6 comprises a reinforcement strip coated with an adhesive reinforcement 68 that can be activated.

In figure 18b upper reinforcement 47 has a variable width that first of all increases, if tab 46 is taken as the origin, and then reduces. Lower edge 471 of said upper reinforcement is adjacent to lower line of weakness 44 while upper edge 470 is adjacent to upper line of weakness 43.

In figure 19a upper reinforcement 47 consists of a row of strips or lines 48 of plastic material or varnish that extend from one line of weakness 43 to the other 44. Arc 6 has a lower reinforcement 67 that also consists of a strip or line.

In figure 19b, which is similar to figure 19a, upper reinforcement 47 is a track that constitutes a conducting mouth that can be used for detection purposes.

In figure 20a, part of which is similar to figure 17a, the upper reinforcement has an end 472 that extends beyond said tab 46 as in figure 18a, lower part 65 having a part 66 coated with a layer of adhesive that can be activated.

In figure 20b, which is similar to figure 16, lower part 65 is covered with a lower reinforcement 67.

Figures 21a to 21d are of various types of tabs 46 of the invention.

Detailed description of the invention

According to a first embodiment of the invention the cover may comprise, as an additional means, a so-

called second line of weakness 43 all or part of which is separated towards the top of the so-called lower line by a distance L at least equal to 0.5 H, H being the height between the so-called lower line and the upper or top end of said cover 1, lines of weakness 43, 44 that define an opening strip 45 of width L.

Advantageously, said line of weakness may not extend around the entire periphery of the cover and constitutes a partial line of weakness 430 such that head 5 of the cover remains fastened to opening strip 45. Partial line of weakness 430 extends at an angle α that ranges typically between 240 and 320°.

Gripping tab 46 is typically positioned along a generating line of said cone and is located between two lines of weakness 43, 44 and fastened to said opening strip 45, said tab 46 using said notches 460, 461 to automatically direct the tearing strain when said cover is opened towards said two lines of weakness such that said cover is opened easily, ensuring the remaining lower part 11 of the cover located beneath said lower line 44 stays intact and said cork wire 3, if fitted, is freed. Figures 21a to 21d are of various types of tabs 46 of the invention.

Said tab 46 may comprise notches or recesses 460, 461 made in said film or sheet material constituting said cover, said notches constituting the means to direct the tearing strain of said strip 45.

Typically width L_1 of said tab 46 ranges from 0.5 L to L with L ranging between 1.5 and 4 cm.

All the figures of covers of the invention (figures 6 to 20) include a tab 46 that has an upper notch 460 and a lower notch 461 running along its edges in the axial direction.

In most of these figures the covers or arcs of the covers comprise a so-called second upper line of weakness 43 all or part of which is separated from the top of the so-called lower line by a distance L at least equal to 0.5 H.

Figure 18a, however, shows a cover comprising a single line of weakness 44 whereas figure 11b shows a cover comprising only two lines of weakness without any additional means.

Figure 18b shows a cover comprising a tab of increasing width.

In a second embodiment of the invention the cover may comprise, as an additional means, means for reinforcing lower part 11, 65. Said means may consist of a lower reinforcement 67 that increases the mechanical properties of all or part of said lower part 11 and adheres to all or part of the inner surface of said lower part 11, 65 at least along said lower line of weakness 44 and parallel to said lower line of weakness, said lower reinforcement 67 may also comprise an adhesive layer that can be activated over all or part of the surface that is intended to adhere to said neck.

This embodiment is shown in figures 12b, 14a, 14b, 15b, 17b, 18a, 19a, 19b, 20a and 20b.

The entire lower reinforcement 67 may comprise a layer that can be activated and constitutes a circular strip 68 the width of which is at least equal to 5 mm and that can extend over all or part of the height of said lower part 11 and that is adjacent to at least the upper edge of said lower part 11 along and parallel to said lower line of weakness 44.

This embodiment is shown in figure 14a.

In a third embodiment of the invention the cover may comprise means for fastening all or part of said lower part 11, 65 as additional means. Therefore, said lower part 11 may comprise a layer of glue or adhesive
5 on all or part of the inner surface as fastening means that can be activated and that constitutes a part 66 adhered to said neck, typically after the adhesive has been activated.

Said glue or adhesive may comprise a complex layer
10 consisting of a layer that adheres to the glass and a layer that adheres to the material comprising the inner surface of said cover, typically aluminum, paper or a layer of plastic material or varnish.

This embodiment is shown in figures 11a, 12a, 12b,
15 13a, 13b, 14a, 15a, 18a and 20a.

In figures 11a, 12a, 13a, 13b, 15a and 20a the material constituting lower part 11 of the cover is bonded directly to the neck (reference 66 in this configuration) whereas in figures 12b, 14a and 18a the
20 lower reinforcement is bonded to the neck and in figures 14a and 18a the lower reinforcement is a strip (reference 68) adhering to the neck.

In a forth embodiment of the invention the cover may comprise a so-called upper reinforcement means as
25 additional means. Reinforcement means 47 of said upper part is selected, particularly in terms of type and position on the inner surface of said upper part, to increase the mechanical properties of all or part of said upper part such that when said recipient or bottle
30 is opened for said first time said opening strip 45, which is created by pulling on gripping tab 46, removes the whole of said upper part 10 along with it.

Said upper reinforcement means 47 may comprise a lateral end 472 that reinforces all or part of said gripping tab 46. Said lateral end 472 may extend beyond said gripping tab such that said lateral end 472
 5 assumes the role of said gripping tab when the cover is first opened, as shown in figures 18a and 20a.

Reinforcement means 47 may comprise a reinforcement strip or line that has a lower edge 471 adjacent to at least lower line of weakness 44.

10 Figures 13a, 13b, 16, 18b, 20b show configurations in which the upper reinforcement is a strip that covers and reinforces the inner surface of opening strip 45.

Figures 12a, 12b, 17a, 17b, 18a, 19b and 20a, on the other hand, show various types of reinforcement
 15 strips certain of which are only adjacent to the lower line of weakness (figures 12a, 12b, 14b) and constitute a very thin line 48, as shown in figures 12b and 14b.

Said reinforcement means 47 may comprise an upper part or edge 470 that may or may not belong to the same
 20 reinforcement strip or line, said upper 470 and lower 471 edges being separated by a width L, that is constant or otherwise depending on angular position α , width L ranging typically between 0.4 and 4 cm, average width L being preferably between 0.3 and 0.7 times H, H
 25 being the height between the so-called lower line and the upper end or top of said cover 1.

Figures 12a to 13a and 16 to 20b are non-limitative examples of the very wide range of reinforcement means 47 possible according to the
 30 invention.

As illustrated in figures 13b and 18b, width L is not necessarily constant and increases, typically regularly, with the angular position α , width L being

at its smallest at said tab 46 where angle α is equal to 0, as shown in figure 9.

According to different versions, said upper reinforcement means 47 may cover the entire interior surface (see figures 13a, 13b, 16, 18b, 20b) or inner periphery of the free part of said opening strip 45 (see figures 17a, 17b, 19b, 20a).

Figures 18a and 19a show particular reinforcements in that there is a single line of weakness 44 in figure 18a and that the reinforcement in figure 19a consists of a row of lines 48 more or less parallel to each other.

Figures 11a to 20b (except figure 11b) show various combinations of additional means.

At least one of the additional means is required in order to implement the invention but 2, 3 or 4 of these additional means may also be used simultaneously, as shown in figure 12b, depending on which aspects of the invention are to be set off to advantage.

According to the invention said upper 47 or lower 67 reinforcement means may consist either of a thin sheet or reinforcement strip, typically of a plastic material (preferably PET or PP), paper, or a layer, strip or line of plastic, resin, varnish or paint material and generally of any means that provide a localized increase in the mechanical characteristics and enable the objectives of the invention to be realized.

According to the invention the material constituting said cover may be selected from sheets or strips of Al or Al alloys, Sn or Sn alloys, shrinkable plastic, Al/PO/Al complex multilayers, Al/PO/paper, PO/Al/PO, charged PO/Al/PO, where Al refers to a layer

of aluminum, PO a layer of polyolefin (preferably PE) capable of containing a charge that is typically mineral.

The thickness of said material in sheets or strips
 5 may range between 25 and 50 μm when the material is aluminum or an alloy, between 110 and 150 μm when the material is tin or an alloy, between 60 and 100 μm when the material is a shrinkable plastic film and between 60 and 110 μm when the material is a complex multilayer
 10 material, typically Al/PO/Al.

Another aim of the invention consists in a method for producing covers 1 of the invention, a method in which:

- a blank of arc 6 of said skirt is cut out of
 15 said film or sheet material of height H',

- said lower line of weakness 44 and said notches 460, 461 are provided on an axial edge 60,

- said additional means are provided, being selected from said upper line of weakness 43, said
 20 upper reinforcement means, said lower reinforcement means,

- a radial line of heat- or pressure-activated adhesive 63 is applied, typically on the other axial edge 61 of said arc, except on the part matching or
 25 opposite said tab 46,

- said arc 6 is rolled on a chuck by folding axial edge 60 back onto the other axial edge 61, a line of adhesive is applied between the two edges, or said pre-applied radial line of adhesive is activated, to shape
 30 said skirt 4 by pressing edges 60,61 together and possibly creating said grooves 9, and a head 5 is assembled or created, possibly by adding a part of the head and fastening it typically by thermobonding to

Figures 11 to 20b show arcs 6 of the invention before they are rolled.

5 In the method of the invention the upper or lower reinforcement can be deposited either by bonding a strip or part of a strip 47 with the mechanical characteristics required, which are typically resistance to tearing, and of a required shape, which is typically part of an annular sector, or by using a gun to apply a strip or line 48 of melted plastic material that is adherent and that hardens when applied.

According to the invention said upper and lower
15 reinforcement means may be a self-adhesive label of
suitable shape applied to said arc 6.

The method of the invention can be perfectly integrated into the standard methods used to shape covers by rolling arcs and it therefore constitutes a method that is just as economical and productive as the standard method.

A further aim of the invention relates to the use of a cover of the invention as an overcapping cap for still wines. Once the measurements of the covers of the invention have been suitably modified they may be used to overcap bottles of still wines, which are typically sealed with a cork, without or without a head. In this configuration the covers do not generally include grooves 9 and said additional means is preferably a second line of weakness 43.

Lower line of weakness 44 is preferably located on glass ring 20, which is specific to bottles of still wine.

Examples of embodiments

Conical covers 1, such as that in figure 6, have been have been produced by rolling arcs as shown in
 5 figures 15a (test 1) and 15b (test 2) according to the method described above.

The cover in figure 6 comprises a skirt 4 and a head 5 with two lines of weakness: an upper line 43 and a lower line 44 separated from each other by a distance
 10 L of 30 mm, lower line 44 defining the upper or separable part 10 of the cover and the lower or fixed part 11 of the cover. The cover is shaped by rolling an arc 6 of a skirt according to figure 11a and thermobonding or bonding an axial edge 60 to the other
 15 edge 61 (not shown in figure 6). A dotted line shows line of adhesive 63 that seals the two edges together.

Before the cover is rolled lines of weakness 43, 44 and notches 460, 461 that define said 46 are created, the bottom of each notch 460, 461 being
 20 located on the corresponding line of weakness 43, 44. As shown in figures 6 and 11a, said tab 46 is checkered, i.e. provided with a lattice-work of small scores obtained by stamping when said arc and notches are cut out, in order to differentiate the tab visually
 25 and in terms of its appearance and to reinforce the visual contrast between the tab and the rest of the cap to encourage the consumer to use said tab 46 immediately in order to open the cover.

Upper part 10 of the skirt is provided with a row
 30 of grooves 9 that have both a visual and a technical function as they can enable line of weakness 44 to be broken cleanly without tearing lower part 11 of the skirt accidentally.

5 The measurements of the produced covers are given
in figure 6 with namely:

- The width L_1 of the checkered tab shown in figure 10 6 is 25 mm.

The conicity of cover 1 is 6° , i.e. the angle formed by the oblique surfaces of skirt 4 shown in figure 6.

$$H' = 130 \text{ mm}$$
$$H'' = 80 \text{ mm}$$

A 40 μm -thick strip of aluminum was used as a material the outside surface of which was decorated with a gold-colored varnish.

Test 2:

A reel consisting of a strip support was loaded with self-adhesive paper labels of a suitable shape and

height H_3 of 25 mm. The labels were then transferred to the blanks of arcs 6.

Test 3:

This test is similar to test 2. It differs in
5 that a reel consisting of a strip support was loaded with self-adhesive paper labels coated with a layer of widely available, water-activated adhesive.

Other tests:

Covers similar to the above were also produced in
10 30 μ m-thick strips of corrugated aluminum but that also comprised an upper reinforcement 47 for said upper part 10 that was positioned just above so-called line of weakness 44.

In a first embodiment, such as that shown in
15 figures 12a, 17a, 18a and 20a, upper reinforcement 47 consists of a PE-based black strip that adheres to the sheet of aluminum and is typically 5 mm wide, said strips running along line(s) of weakness 43, 44.

In a second embodiment, such as that shown in
20 figure 12b, 14b, 17b, 19a or 19b, upper reinforcement 47 is provided by applying a "hot-melt" type of resin line 48 using an application gun containing melted resin that solidifies when it comes into contact with the sheet of aluminum.

25 According to one version of this embodiment a line of resin is applied that is quick drying when exposed to ultraviolet rays.

In a third embodiment, such as that shown in
30 figures 13a, 13b, 16, 18b, 20b, said upper reinforcement 47 is provided by a strip that is typically self-adhesive and that covers the inner surface of opening strip 45 and that is more or less the same width L as said opening strip.

In a fourth embodiment, such as that shown in figure 13b, an upper reinforcement 47 is provided that is similar to that in the third embodiment except that width L of the opening strip and reinforcement is not constant and typically increases from gripping tab 46.

Bottles of champagne fitted with cork wires and covers 1 according to the test of the invention and bottles fitted with covers of the background art (covers with "Tircell" of figure 3) were subjected to an opening test performed by a group of people representing the population of consumers. They were instructed to proceed normally and not to be any more careful than they would usually be at a social occasion.

The covers of the invention were opened entirely satisfactorily in that:

a) the whole of the upper part of cover 10 was removed and the cork wire revealed in a single movement by pulling tab 46 between the thumb and index of one hand while the other held the bottle,

b) said lower part 11 was not damaged, the rim of said lower part 11 matching said lower line of weakness 44 and being therefore relatively regular and circular.

On the other hand, with covers of the background art the results were very irregular with both opening problems as the "Tircell" did not always fulfill its function correctly and broke a considerable number of times. There were also edging problems as more often than not the lower part of the cover was either torn or came away from the neck.

It was also observed that once the bottles had been opened and left in an ice bucket and handled a number of times lower cover part 11 of the bottles of

the invention was always intact whereas the same could not always be said of the bottles provided with covers of the background art.

5 Advantages of the invention

The invention has the double advantage of, on the one hand, overcoming the drawbacks of easy-to-open covers for sparkling wines by enabling the entire upper part 10 of the cover to be removed in a single movement by one hand while the other holds the bottle, and, on the other, to enable covers to be produced without requiring considerable modifications in the standard production methods. The invention also discloses a great many embodiments that can set off certain aspects of the easy-to-open cover to advantage and therefore provides covers with a technical performance level that meets customers' requirements.

LIST OF REFERENCES:

20	COVER	1
	UPPER PART OF COVER	10
	LOWER PART OF COVER	11
	BOTTLE	2
	GLASS RING	20
25	CORK WIRE	3
	TIGHTENING WIRE	30
	LOOP	31
	SKIRT OF COVER	4
	LINE OF WEAKNESS	40
30	LINES OF WEAKNESS + TIRCELL	41
	LINES OF WEAKNESS//	42
	UPPER LINE OF WEAKNESS	43
	partial UPPER LINE OF WEAKNESS	430

	LOWER LINE OF WEAKNESS	44
	OPENING STRIP	45
	TAB	46
	UPPER NOTCH	460
5	LOWER NOTCH	461
	UPPER REINFORCEMENT (STRIP)	47
	UPPER REINFORCEMENT (LINE)	48
	HEAD	5
	ARC OF SKIRT	6
10	AXIAL EDGES	60, 61
	UPPER EDGE	62
	LINE OF ADHESIVE	63
	UPPER RIM	64
	LOWER PART	65
15	BONDED PART	66
	REINFORCED PART/LOWER REINFORCEMENT	67
	BONDED REINFORCEMENT (STRIP)	68
	UPPER PART	69
	NECK	7
20	CORK	8
	CORK HEAD	80
	GROOVES	9

ART 34 AMDT

CLAIMS

1. An easy-to-open overcapping cover 1, which is typically conical, comprising a head (5) and a skirt (4) of a film or sheet material, for a recipient or bottle of sparkling wine (2) sealed with a cork (8) with a head (80) with means for fastening the cork to the neck of said recipient, typically a metal cork wire (3) provided with a tightening wire (30) that goes under the glass ring (20) of the neck of said bottle and constitutes an opening twist or loop (31), comprising easy-to-open means provided on said skirt by two lines of weakness, characterized in that:

a) said easy-to-open means comprise at least one so-called line of weakness (44), described as being lower, located on the cover at a height H that defines a partition of said cover with a so-called upper part (10) and a so-called lower part (11), the height being such that after said cover and said recipient or sealed bottle have been assembled said line of weakness (44) breaks when said recipient or said bottle is first opened to provide access to said cork or possibly said cork wire once said upper part (10) has been removed, said lower part (11) remaining intact on the neck,

b) a so-called upper line of weakness (43) all or part of which is separated from the top of the so-called lower line by a distance L at least equal to 0.5 H, H being the height between the so-called lower line and the upper or top end of said cover (1), upper (43) and lower (44) lines of weakness defining an opening strip 45 of width L the end of which constitutes a gripping tab (46),

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c) the upper and lower ends of said gripping tab (46) are provided with notches or recesses (460, 461) intended to direct the tearing of tear strip (45) during said first opening such that when said recipient
5 or bottle is opened for said first time said tear strip (45), which is created by pulling on gripping tab (46), removes the whole of said upper part (10) along with it.

2. Cover of claim 1 wherein so-called upper line
10 of weakness (43) constitutes a partial line of weakness (430).

3. Cover of either of claims 1 or 2 wherein gripping tab (46) is positioned according to a generating line of said cone and is located between two
15 lines of weakness (43, 44) and fastened to said opening strip (45), said tab (46) using said notches (460, 461) to automatically direct the tearing strain when said cover is opened towards said two lines of weakness (43, 44) such that said cover is opened easily, ensuring the
20 remaining lower part 11 of the cover located beneath said lower line (44) stays intact and said cork wire 3, if fitted, is freed.

4. Cover of any of claims 1 to 3 wherein said tab (46) comprises notches or recesses (460, 461) made in
25 said film or sheet material constituting said cover.

5. Cover of any of claims 1 to 4 wherein width L_1 of said tab (46) ranges from $0.5 L$ to L with L ranging between 1.5 and 4 cm.

6. Cover of any of claims 1 to 5 wherein said
30 lower part (11, 65) comprises a so-called lower reinforcement (67) reinforcement means that increases the mechanical properties of all or part of said lower part (11) and adheres to all or part of the inner

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surface of said lower part (11, 65) at least along said lower line of weakness (44) and parallel to said lower line of weakness, said lower reinforcement (67) may also comprise an adhesive layer over all or part of the surface that can be activated and that is intended to adhere to said neck.

7. Cover of claim 6 wherein the entire said lower reinforcement (67) comprises a layer that can be activated and constitutes a circular strip (68) the width of which is at least equal to 5 mm and that can extend over all or part of the height of said lower part (11) and that is adjacent to at least the upper edge of said lower part (11) along and parallel to said lower line of weakness (44).

8. Cover of either of claims 6 or 7 wherein all or part of the inner surface of said lower part (11) comprises a layer of glue or adhesive as fastening means that can be activated and that constitutes a bonded part 66 that adheres to said neck, typically after it has been activated.

9. Cover of claim 8 wherein said glue or adhesive comprises a complex layer consisting of a layer that adheres to the glass and a layer that adheres to the material comprising the inner surface of said cover, typically aluminum, paper or a layer of plastic material or varnish.

10. Cover of any of claims 1 to 9 wherein said upper part comprises a so-called upper reinforcement means (47) selected, particularly in terms of type and position on the inner surface of said upper part, to increase the mechanical properties of all or part of said upper part such that when said recipient or bottle is opened for said first time said opening strip (45),

which is created by pulling on gripping tab (46), removes the whole of said upper part (10) along with it and to enable said upper line of weakness (43) to be removed by said upper reinforcement means.

5 11. Cover of claim 10 wherein said upper reinforcement means (47) comprise a lateral end (472) that reinforces all or part of said gripping tab (46).

12. Cover of claim 11 wherein said lateral end (472) extends beyond said gripping tab such that said
10 lateral end (472) assumes the role of said gripping tab when the cover is first opened.

13. Cover of any of claims 10 to 12 wherein said upper reinforcement means (47) comprise a reinforcement strip or line that includes a lower part or edge (471)
15 adjacent to lower line of weakness (44).

14. Cover of claim 13 wherein said reinforcement means (47) comprise an upper part or edge (470) that may or may not belong to the same reinforcement strip or line, said upper (470) and lower edges (471) being
20 separated by a width L , that is constant or otherwise depending on angular position α , width L ranging typically between 0.4 and 4 cm, average width L being preferably between 0.3 and 0.7 times H , H being the height between the so-called lower line and the upper
25 end or top of said cover (1).

15. Cover of claim 14 wherein width L is not constant and increases, typically regularly, with the angular position α , width L being at its smallest at said tab (46) where angle α is equal to 0.

30 16. Cover of any of claims 10 to 15 wherein said upper reinforcement means (47) cover the entire interior surface or inner periphery of the free part of said opening strip (45).

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17. Cover of any of claims 6 to 16 wherein said upper (47) or lower (67) reinforcement means consist either of a thin sheet or reinforcement strip, typically of a plastic material (preferably PET or PP), paper, or a layer, strip or line of plastic, resin, varnish or paint material.

18. Cover of any claims 1 to 17 wherein said material constituting said cover is selected from sheets or strips of Al or Al alloys, Sn or Sn alloys, shrinkable plastic, Al/PO/Al complex multilayers, Al/PO/paper, PO/Al/PO, charged PO/Al/PO, where Al refers to a layer of aluminum, PO a layer of polyolefin (preferably PE) capable of containing a charge that is typically mineral.

19. Cover of claim 18 wherein the thickness of said material in sheets or strips may range between 25 and 50 μm when the material is aluminum or an alloy, between 110 and 150 μm when the material is tin or an alloy, between 60 and 100 μm when the material is a shrinkable plastic film and between 60 and 110 μm when the material is a complex multilayer material, typically Al/PO/Al.

20. Method for producing covers (1) of any of claims 1 to 19 wherein:

- a blank of arc (6) of said skirt is cut out of said film or sheet material of height H',
- said lower line of weakness (44) and said notches (460, 461) are provided on an axial edge (60),
- said additional means are provided, being selected from said upper line of weakness (43), said upper reinforcement means (47, 48), said lower reinforcement means (67), said means (66) for fastening all or part of lower part (11) to the neck,

22. Method of claim 21 wherein said upper and lower reinforcement means are a self-adhesive label of
25 suitable shape applied to said arc (6).

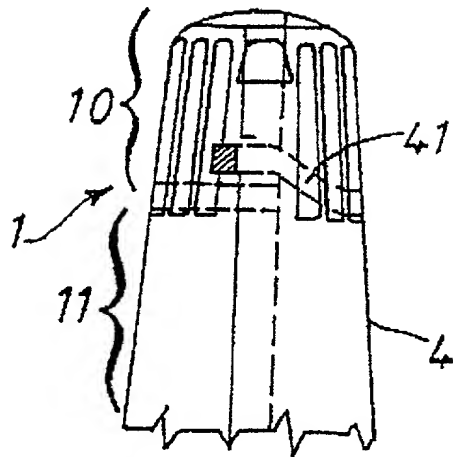


FIG. 1

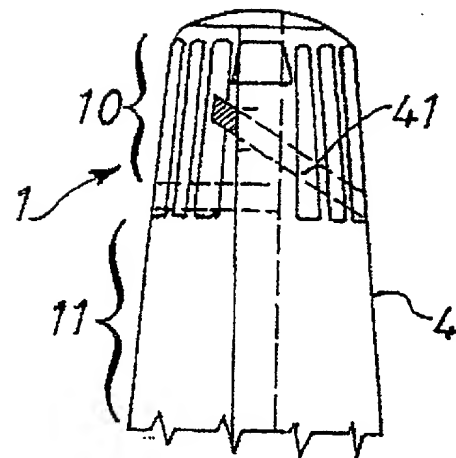


FIG. 2

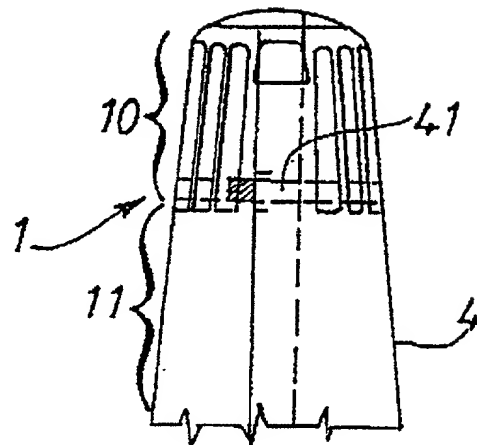


FIG. 3

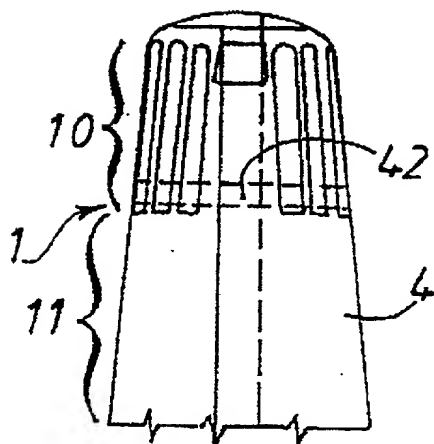


FIG. 4

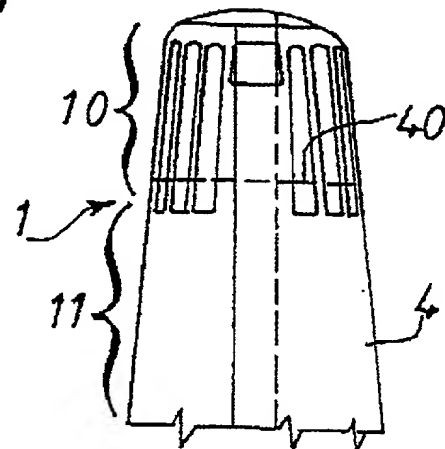


FIG. 5

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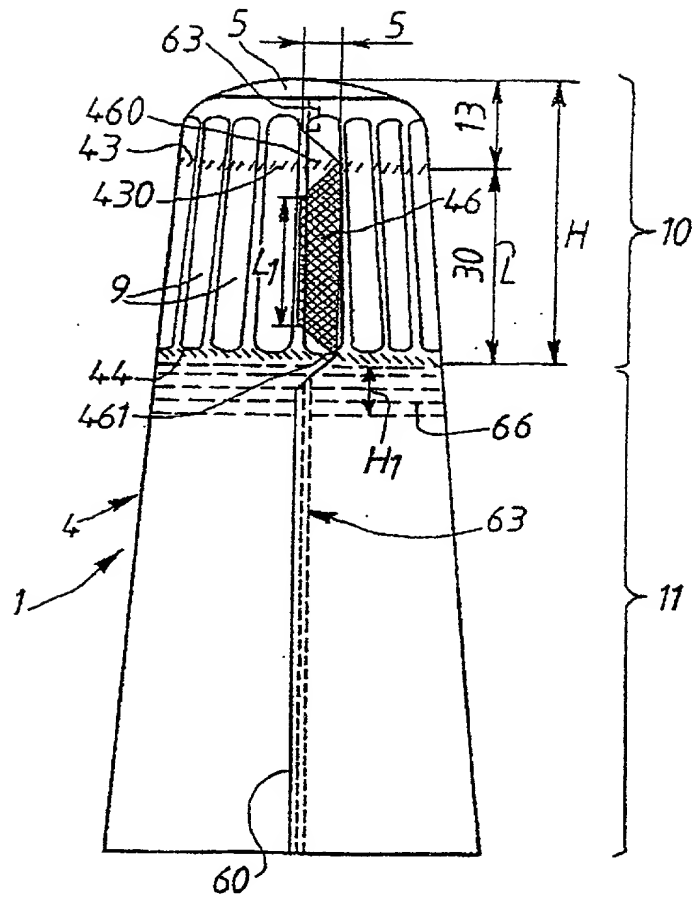


FIG. 6

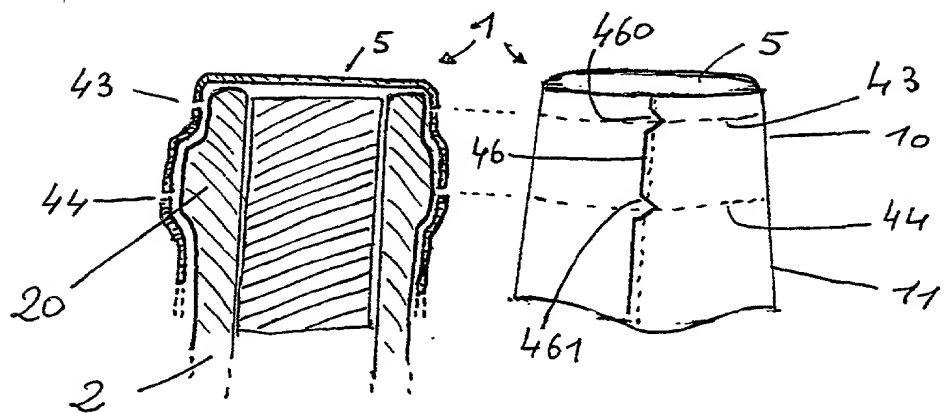
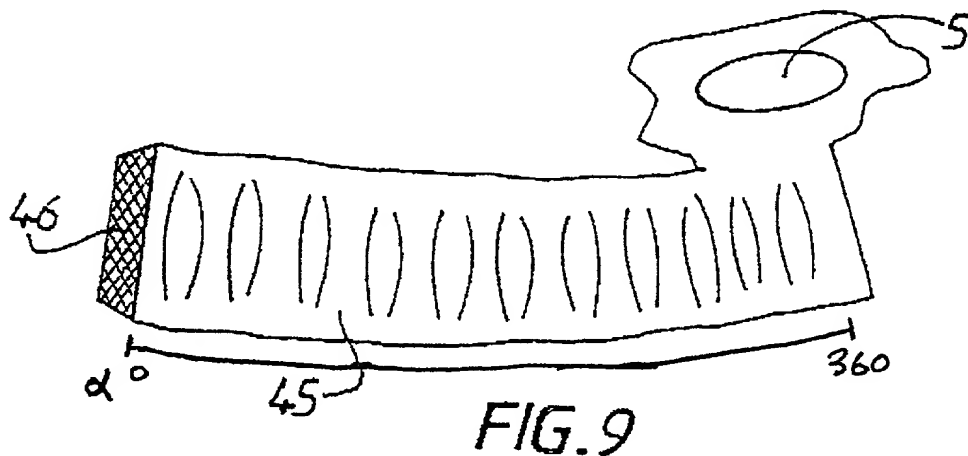
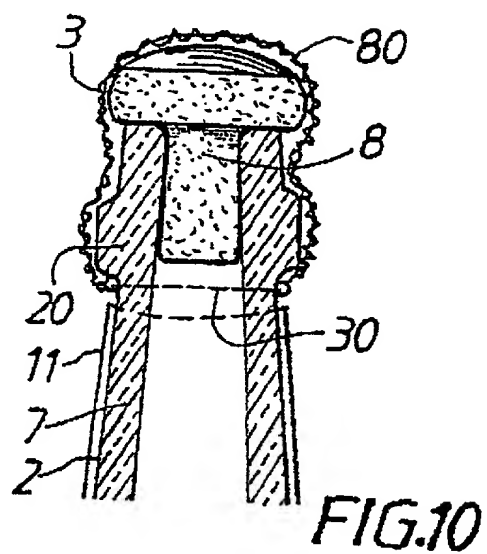
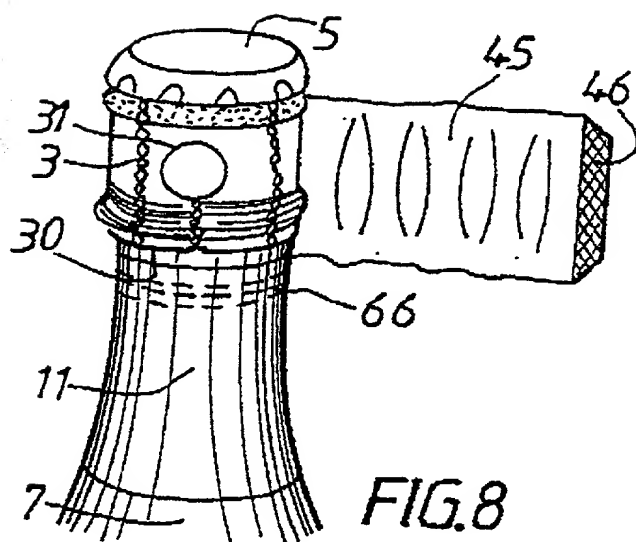
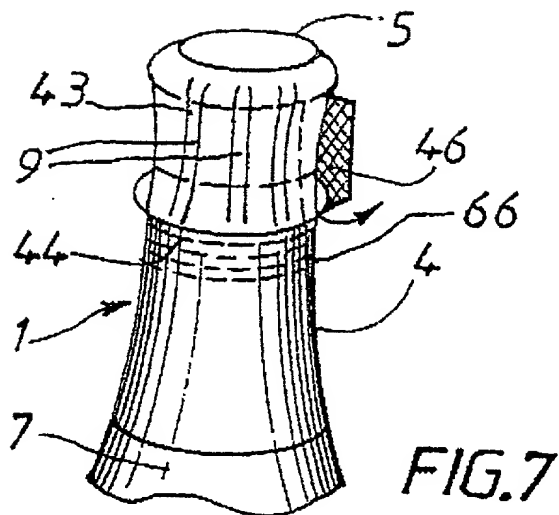
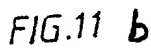
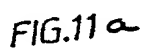


FIG 6a

FIG 6b



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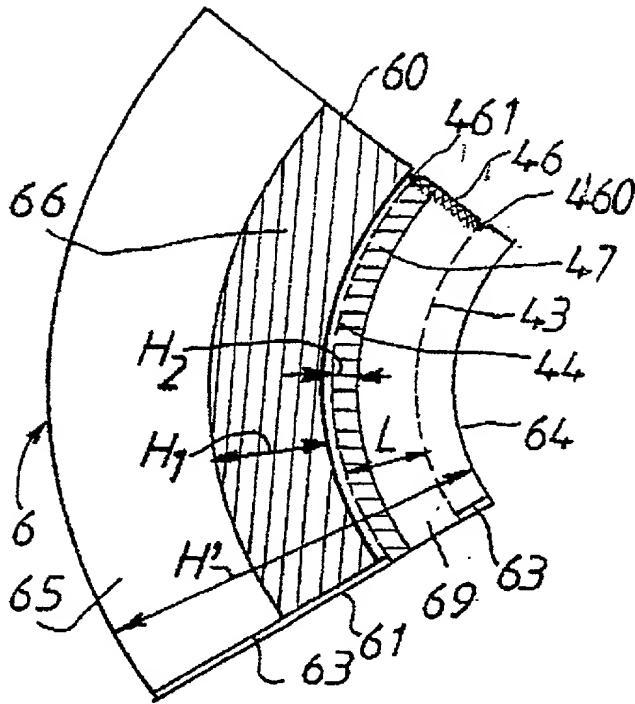


FIG. 12a

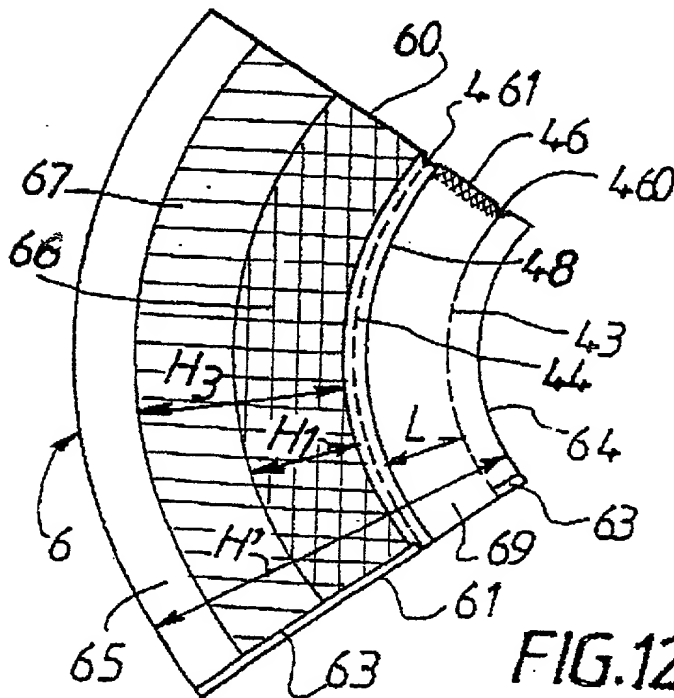


FIG. 12b

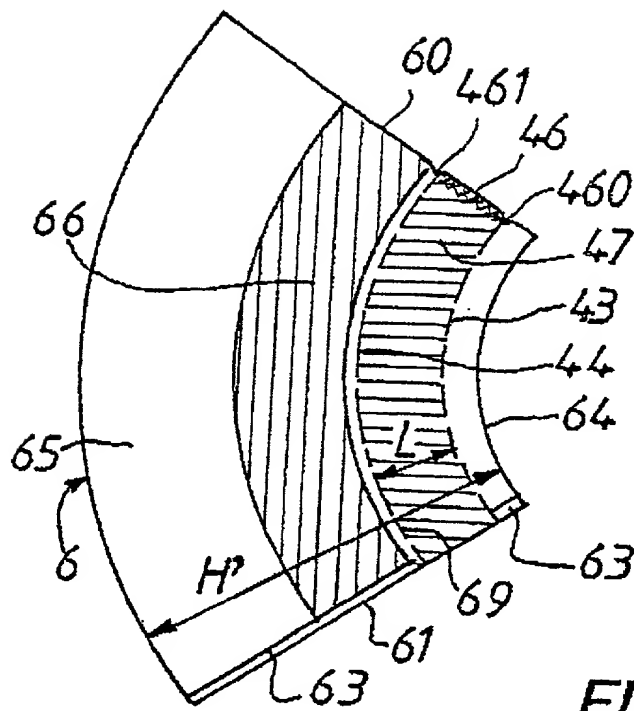


FIG.13a

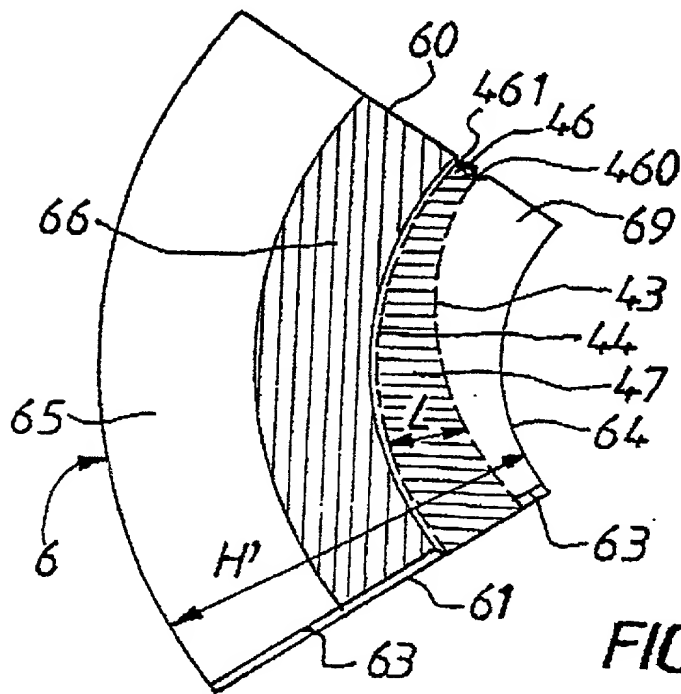
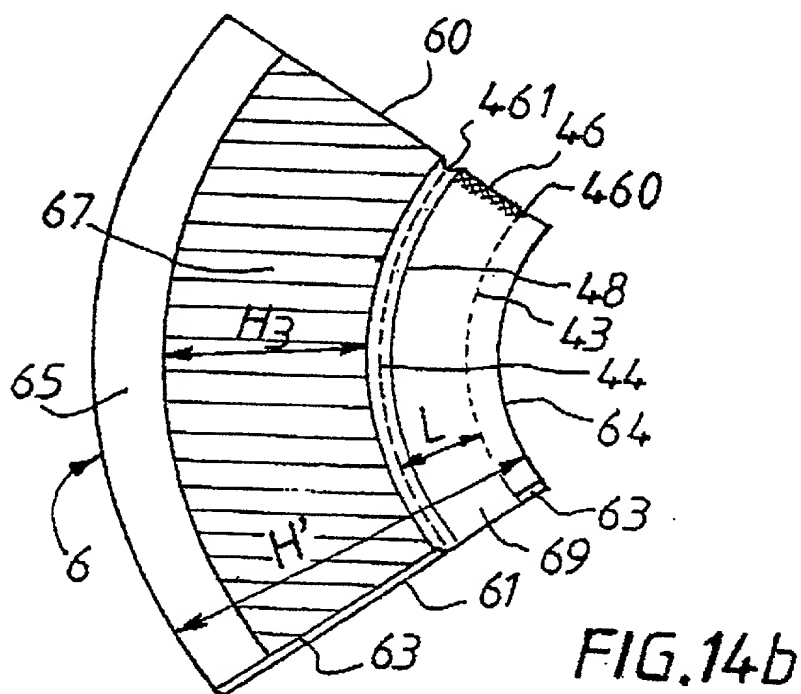
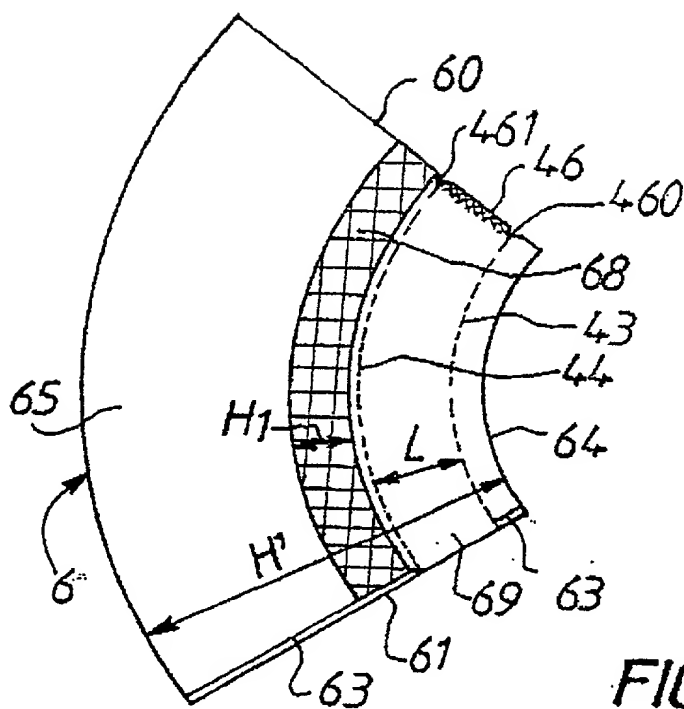


FIG. 13b



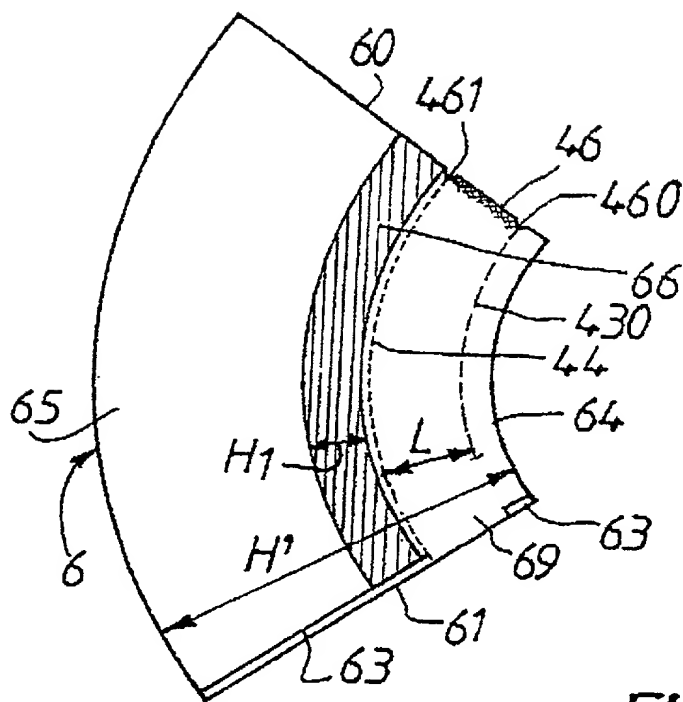


FIG.15a

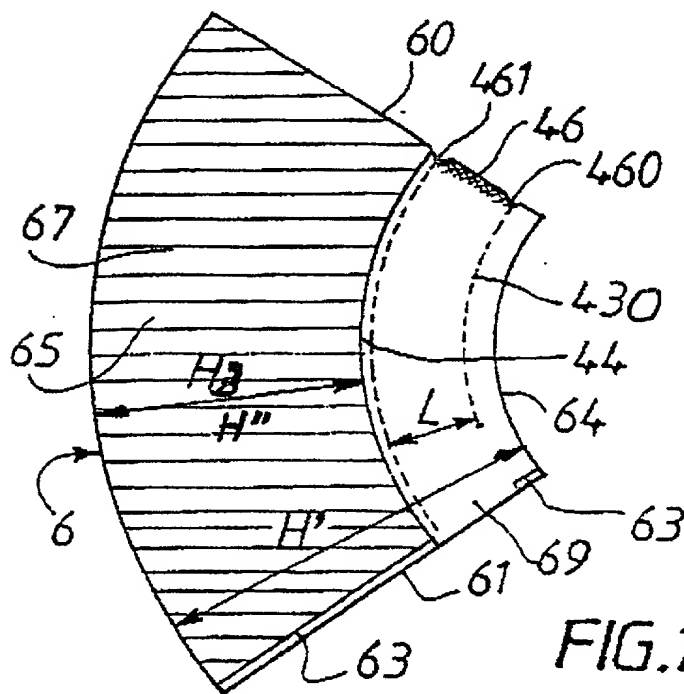


FIG.15b

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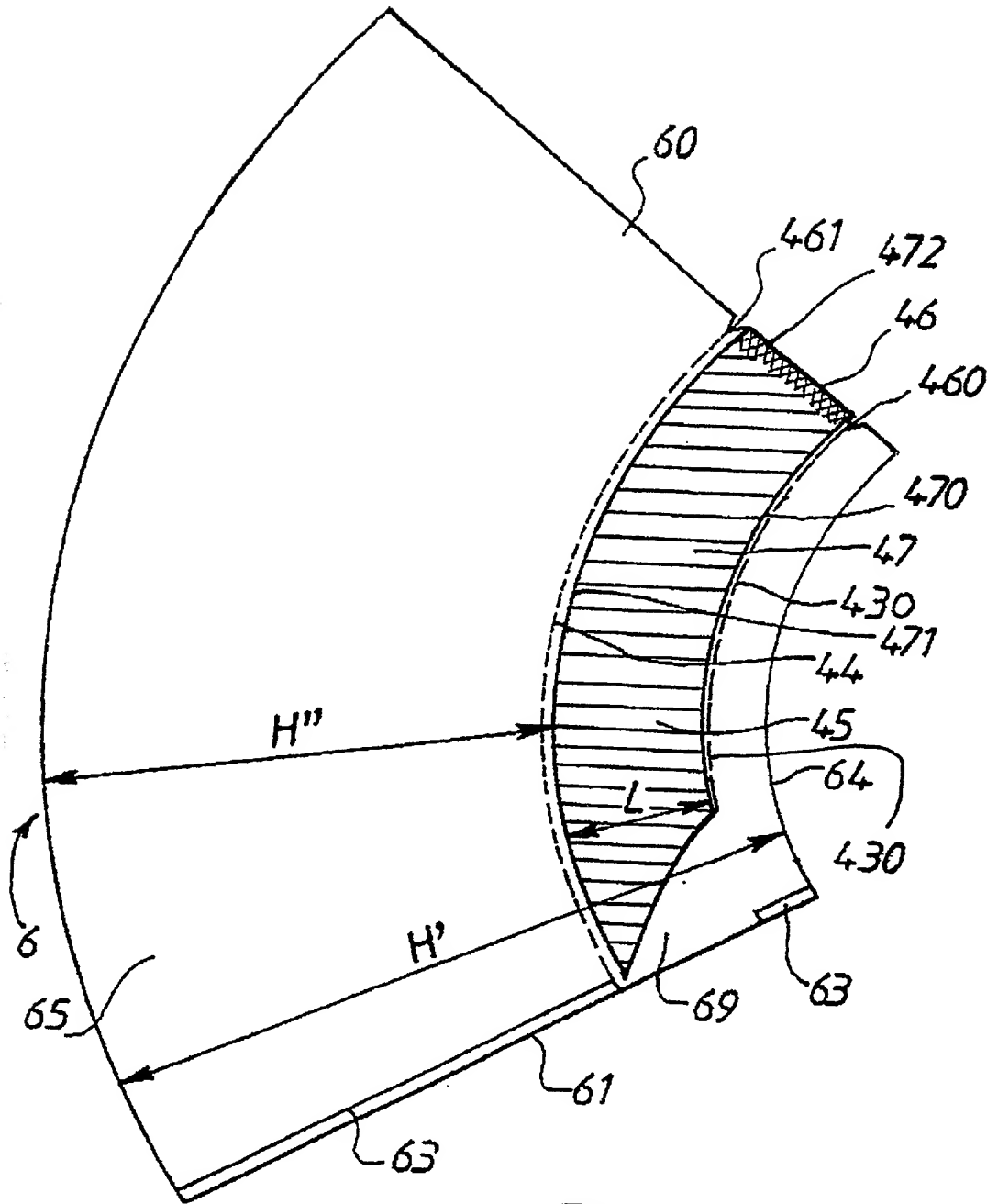


FIG.16

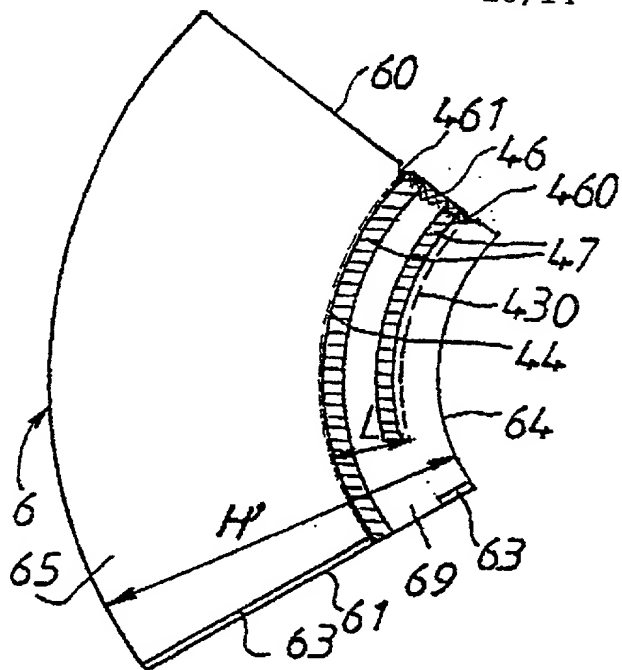


FIG. 17a

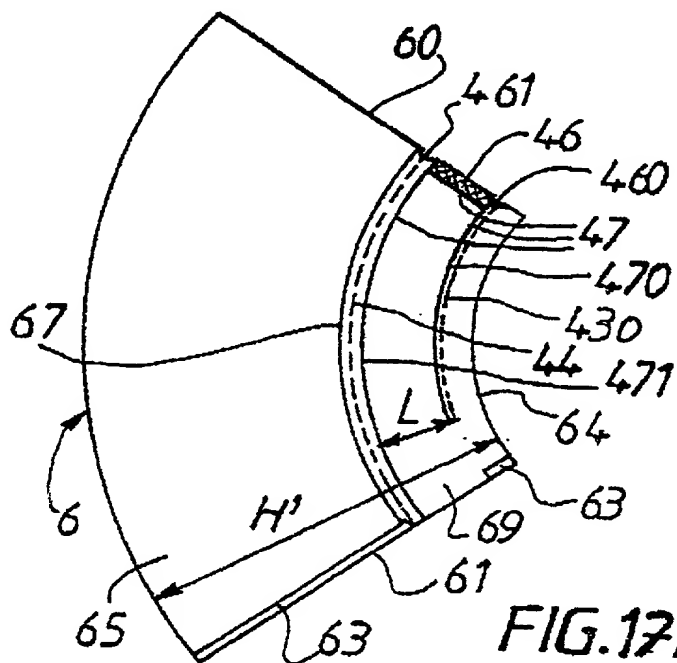


FIG. 17b

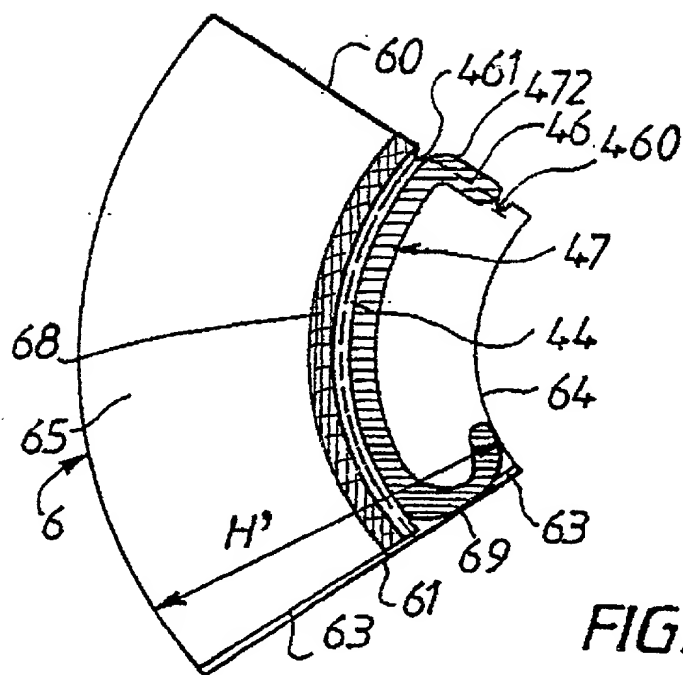


FIG. 18a

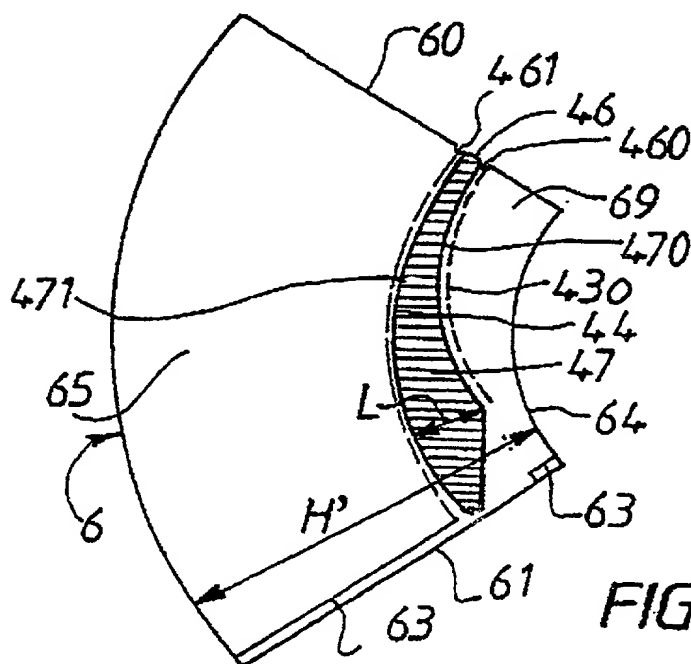
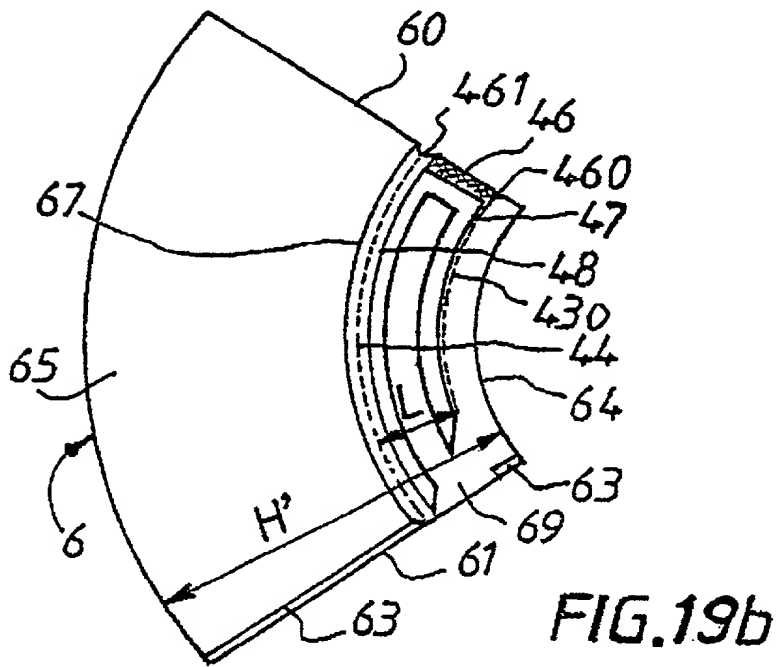
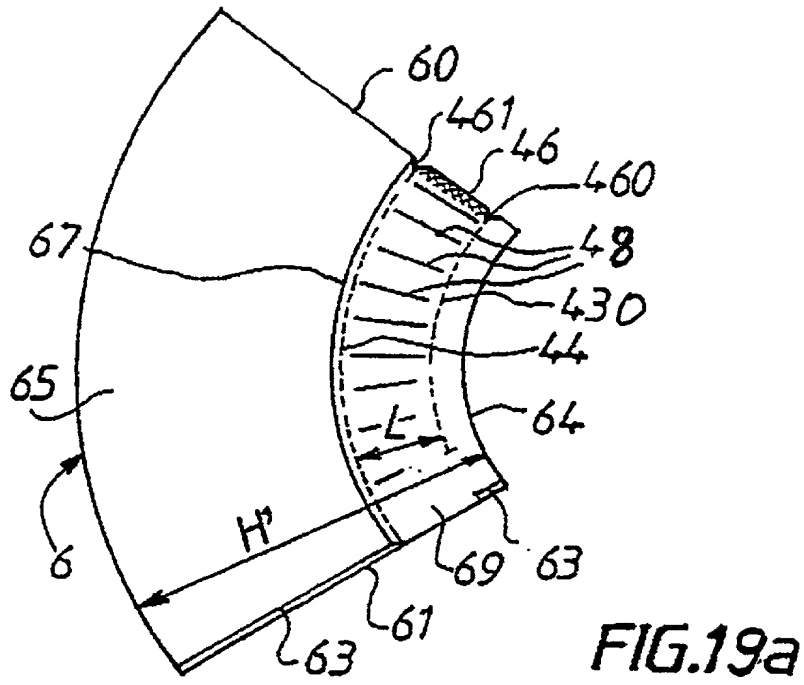


FIG. 18b

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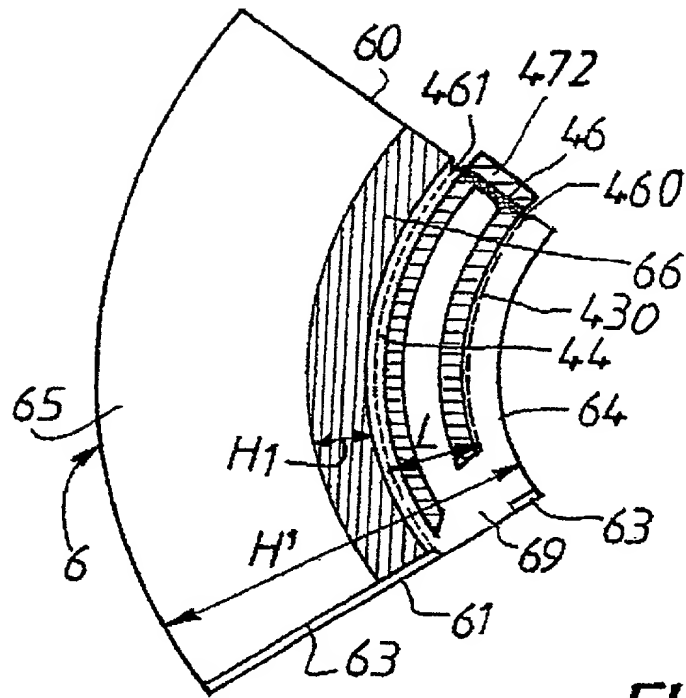


FIG.20a

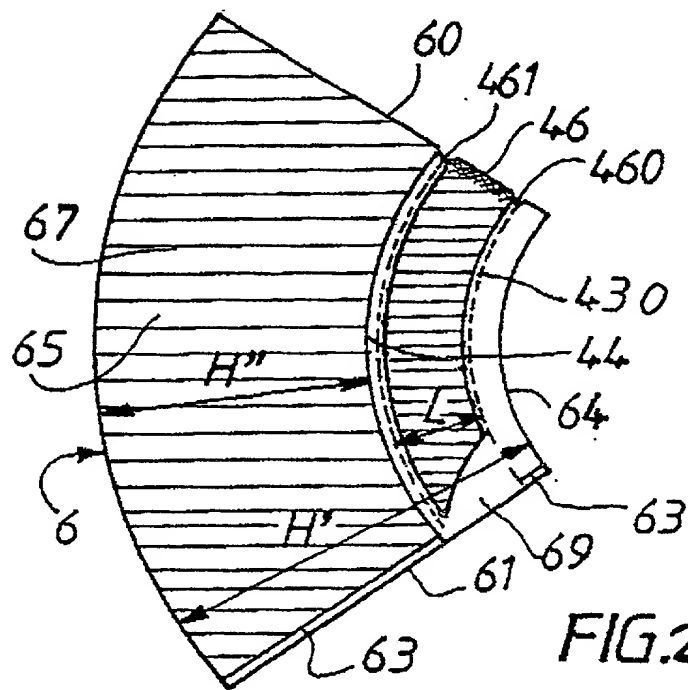


FIG. 20b

[illegible]

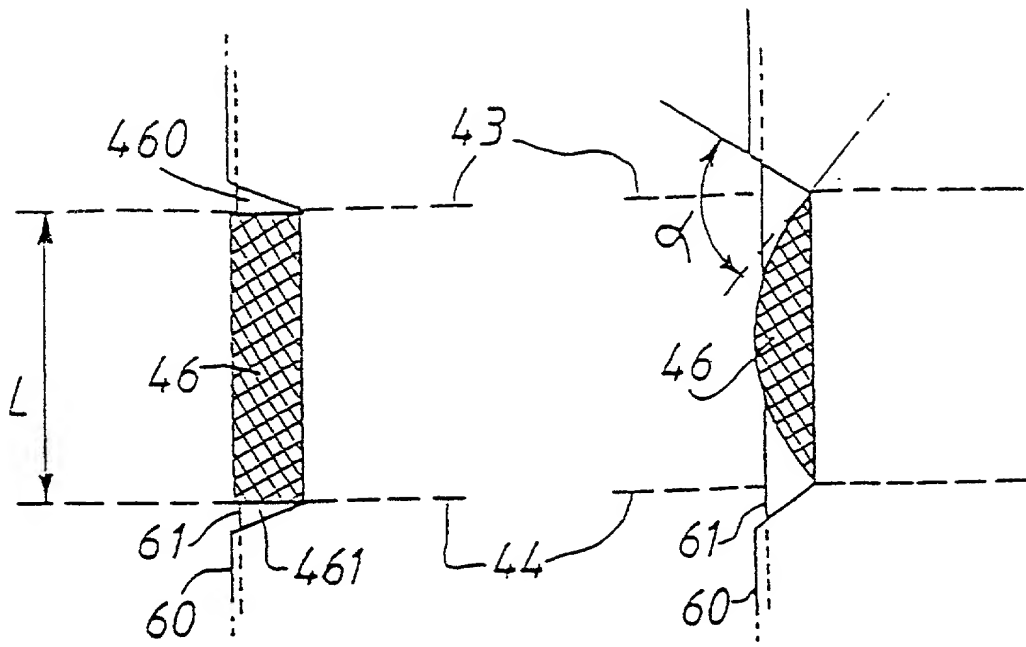


FIG. 21a

FIG. 21b

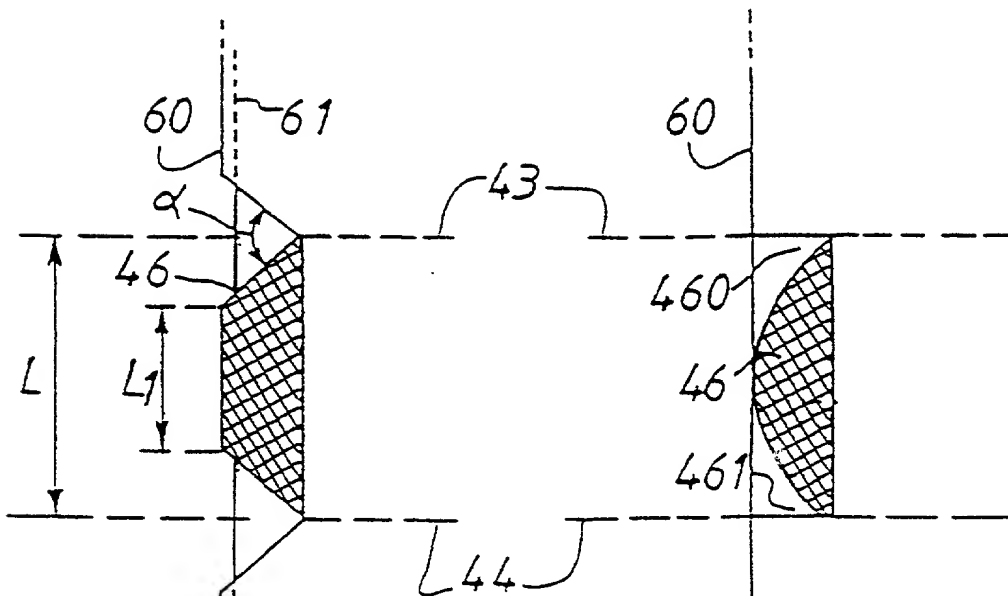


FIG. 21c

FIG. 21d

DECLARATION FOR UTILITY OR DESIGN PATENT APPLICATION

Docket No. 01107

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled
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specification of which

(check one) XX is described and claimed in PCT International Application PCT/FR99/02899

filed on (MM/DD/YYYY) November 24, 1999 amended on _____

(if applicable)

(OR) _____ is described in United States Application Number _____

filed on (MM/DD/YYYY) _____ (OR) _____ is attached hereto.

I hereby state that I have reviewed and understand the contents of the above identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56.

I hereby claim foreign priority benefits under 35 U.S.C. §119(a)-(d) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed below and have also identified below, any foreign application for patent or inventor's certificate, or any PCT international application having a filing date before that of the application on which priority is claimed.

Prior Foreign Application Number(s)	Country	Foreign Filing Date (MM/DD/YYYY)	Priority Claimed? Yes No
98/15004	France	November 25, 1998	X
99/02322	France	February 22, 1999	X
99/07364	France	June 7, 1999	X
99/07365	France	June 7, 1999	X

I hereby claim the benefit under 35 U.S.C. 119(e) of any United States Provisional Application(s) listed below.

I hereby claim the benefit under 35 U.S.C. §120 of any United States application(s), or 365(c) of any PCT International application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT International application in the manner provided by the first paragraph of 35 U.S.C. §112, I acknowledge the duty to disclose information which is material to patentability as defined in 37 CFR §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application:

As a named inventor, I hereby appoint the following registered practitioner(s) to prosecute this application and to transact all business in the Patent and Trademark Office connected therewith:

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. §1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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